EMPUR®

PUR-THERM®

PUR-THERM® stapler system

The system solution
for versatile installation heights

‘Made in Germany’ seal of quality

EMPUR® surface heating systems

Increased comfort and efficiency

The decision to install surface heating is a sensible decision for increased comfort, economy and sustainability. Nowadays, more than 70% of newly-constructed buildings have such a system. Surface heating systems are ideal for combining with modern heat generators and regenerative sources of energy.

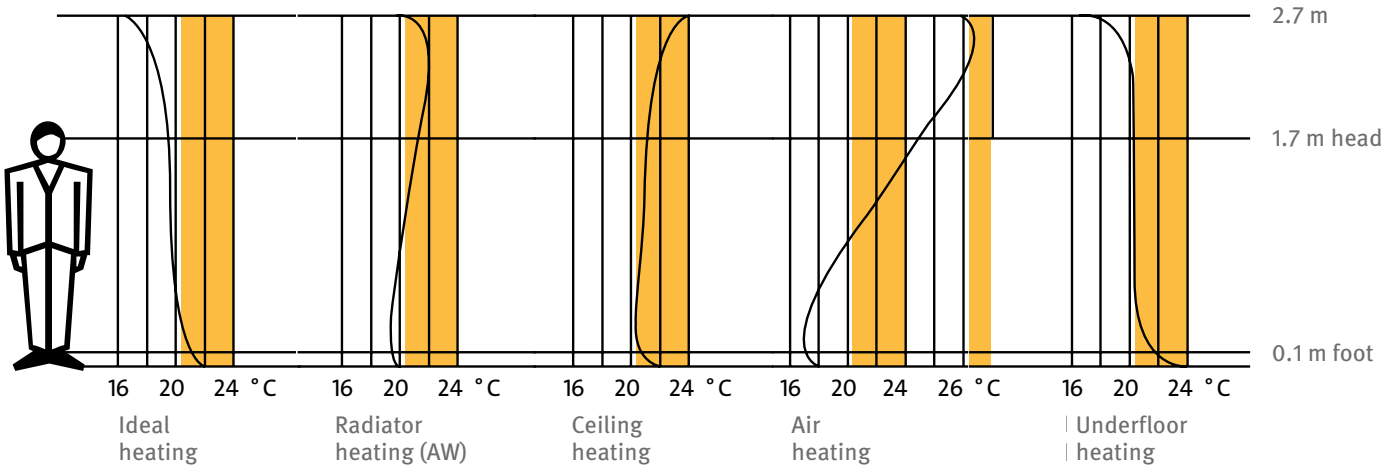
Mild heat radiation from the bottom up creates an increased sense of wellbeing. As a heat source with a large surface area, it can make an exceptional contribution to lowering energy costs at low flow temperatures. In this way, it also makes a significant contribution to sustainability and to protecting the environment.

Underfloor heating is also especially suited to people with allergies, as the heat rises across the entire room and hardly swirls up any dust across the large surface area. It affords the client completely new design possibilities without any visible radiators and increases the building's value in the long term.

Surface heating systems are also being used more and more in modernisation projects. Particular requirements, for example installation height, load capacity, weight, insulating properties and sound absorption can be guaranteed alongside efficient heating.

Surface temperatures

Temperature curve progression: Comparison of "ideal heating" with an underfloor heating system



EMPUR® surface heating systems

Quality „Made in Germany“ from one source

EMPUR® Produktions GmbH is a producer and full-range retailer of innovative, high-quality panel heating systems and has the right solution for every requirement:

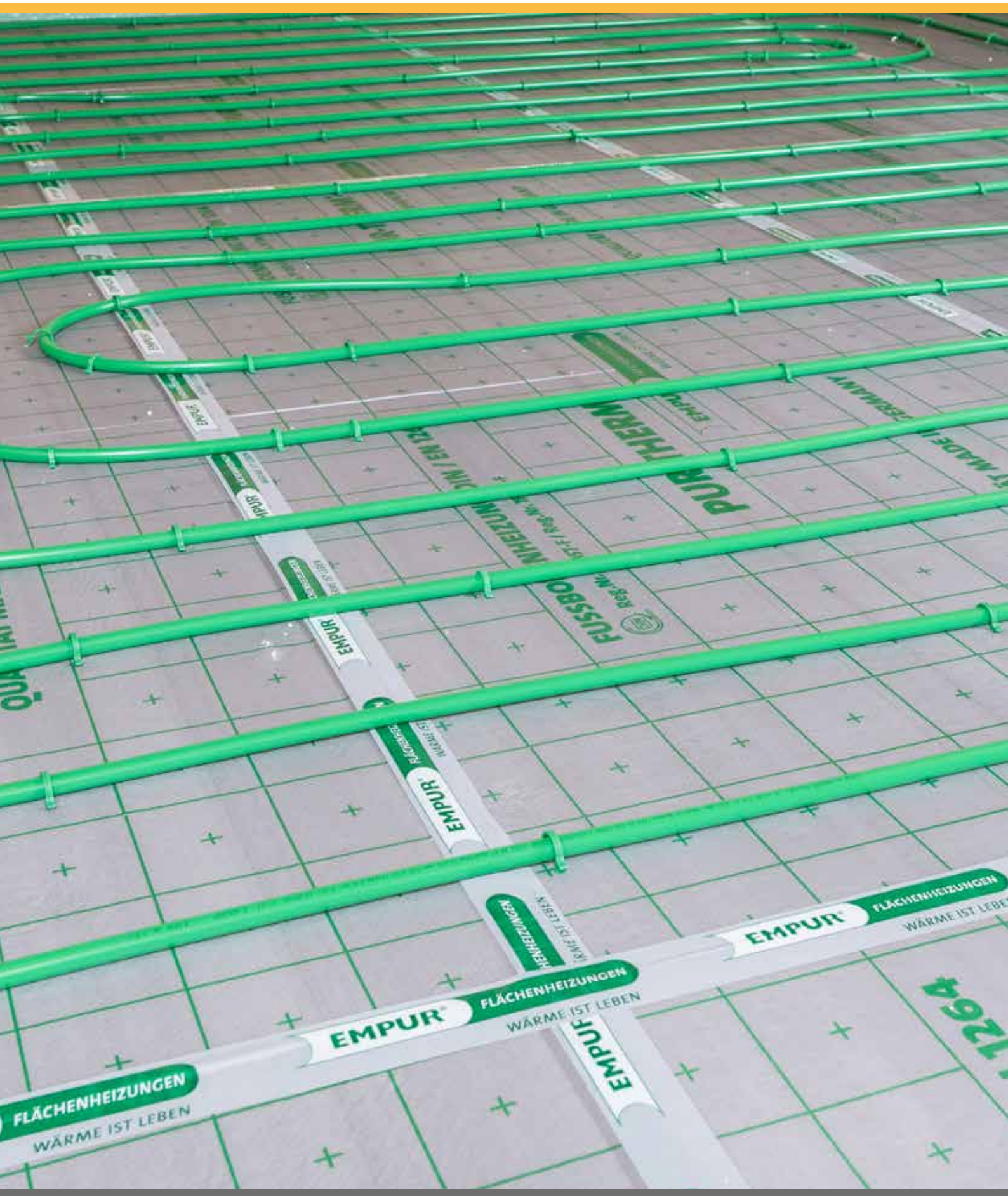
- **Systems without additional installation height or with minimal installation height for modernisation projects**
- **Versatile systems with composite panels and additional insulation for new buildings in private, communal and industrial areas**
- **System accessories and tools**
- **High-quality manifold and control technology**

The company produces and is solely responsible for over 90% of all system components itself using its state-of-the-art systems. We work under a structured quality management system, which is certified by DEKRA in accordance with the DIN EN ISO 9001:2015 international standard.

In the interests of the most objective and neutral product evaluation possible, EMPUR® subjects its products to material testing and certification by nationally recognised testing institutes and assessment centres. High quality, continual and pioneering product developments, technical advice and support, a three-level distribution network across Germany, reliable services, as well as specialist training for wholesalers, specialised craftsmen and planners make EMPUR® a competent partner in the heating industry.

PUR-THERM® stapler system

The thing with the needle



PUR-THERM® stapler system

The thing with the needle

The EMPUR® PUR-THERM® stapler system is a proven and well-known surface heating system, consisting of PUR-THERM® composite panels, KLIMAPEX® plastic heating pipes and PUR-THERM® staples as its main components.

The PUR-THERM® composite panels are available in different versions (polyurethane, EPS, with and without sound absorption). As a result of their foamed or laminated highly tear-resistant, multi-layer laminated film, excellent affixing of the staples is achieved when installing the heating pipes. A pre-printed laying grid as well as a single-sided film overhang for overlapped laying makes stapling with the PUR-THERM® stapler system very easy. To ensure good heat transfer, the heating pipe is uniformly covered with screed.

The stapler system components are all developed by EMPUR® and produced in-house to the “Made in Germany” standard.

PUR-THERM® 15 DIN-Reg.-Nr.: 7F 136-F
PUR-THERM® 17 DIN-Reg.-Nr.: 7F 057-F

Our PUR-THERM® stapler system impresses

- Security for end customers and processors – system components optimally adapted to each other with universal licences
- Reliable implementation of the Energy Savings Regulation (EnEV) requirements in new and old buildings – best energy footprints with PUR insulation materials
- Easy handling with very few system components
- Minimal waste due to overlay technology
- Well-known system with years of practical experience
- Various system panels available with or without sound absorption
- Heat insulation across the entire surface

The bestseller by **EMPUR®** *has already proven itself a thousand times over!*

PUR-THERM® stapler system

The thing with the needle

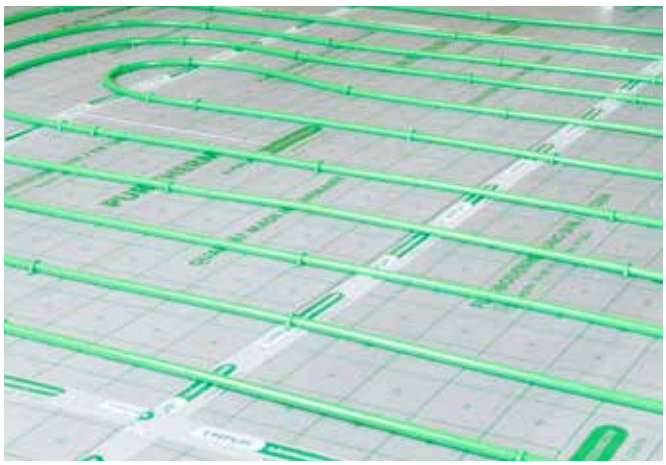
Your route to increased home comfort

Full-surface laying of the bottom insulation, taking into account the existing supply lines.

Fixing of the edge-insulation strips on all ascending parts.

Laying of EMPUR® composite panels. The single-sided film overhang overlaps the connecting panel and prevents the penetration of screed.

Installation of the KLIMAPEX® heating pipes using the preprinted laying grid with PUR-THERM® staples and the stapler system.



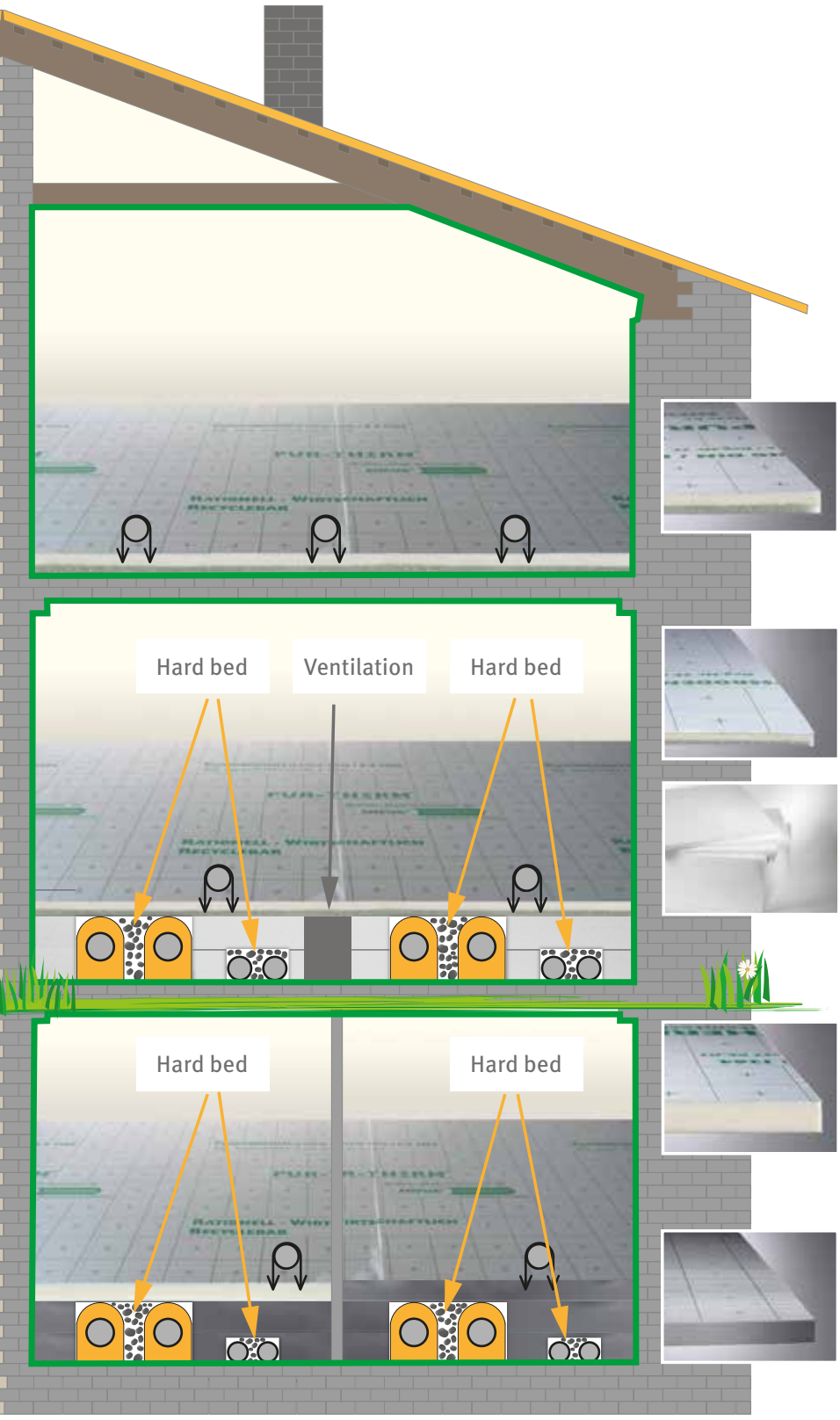
Secure hold of the heating pipes due to optimum fixing of the staples in the highly tear-resistant, multi-layer composite film

Connecting the underfloor heating pipes to the manifold, filling the system with water and leakage test

PUR-THERM® stapler system

Standardised installation

Thus, EMPUR® professional heating engineers work with PUR “Exclusiv”



Top floor:

Composite panel PUR/PE 23 “Exclusiv”
(Item no. 042300) is the lowest panel available in Europe for evenly heated rooms

Ground floor:

Composite panel PUR/PE 14 “Exclusiv”
(Item no. 041400)

2. Additional insulation DEO

1. Additional insulation DEO

Basement, left:

Composite panel PUR 33 “Exclusiv”
(Item no. 043400)

2. Additional insulation DEO WLS 032

1. Additional insulation DEO WLS 032

Basement, right:

Composite panel “Kompakt” EPS-DEO
(Art. no. 023060)

2. Additional insulation DEO WLS 032

1. Additional insulation DEO WLS 032

NOTE PUR-THERM® composite panels simply and reliably implement and meet EnEV specifications. We are happy to answer any questions you might have regarding our stapler system. Give us or your specialist craftsman a call!

PUR-THERM® stapler system

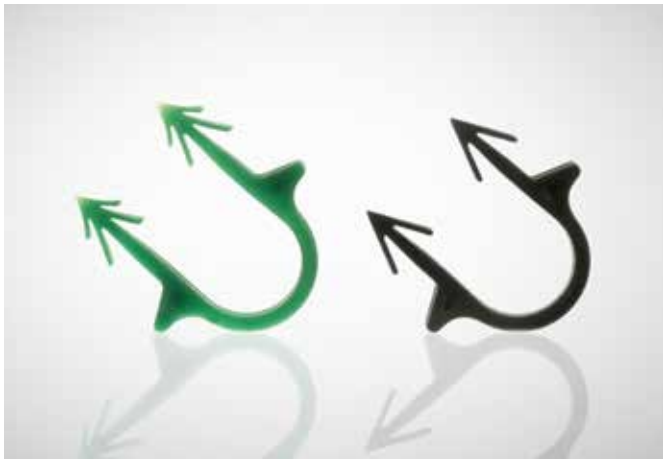
System components

PUR-THERM® composite panels

- PUR/PE “Exclusiv“ in thicknesses 14, 23 and 36 and/or 68 with sound absorption
- PUR “Exclusiv“ 23, 33 and 40 without sound absorption
- Turbo-Cube EPS-DES for large areas in thicknesses 20-2, 25-2, 30-3 and 35-3
- Composite panels EPS-DES and EPS-DEO in various thicknesses

PUR-THERM® stapler system

System components



Staples for PUR-THERM® stapler system and pipes up to Ø 20 mm

a) **long**, green, 50-unit magazine
b) **short** specially for combi composite panels PUR/PE 23 mm and PUR/PE 14 mm (9+5), black, 50-unit magazines

PUR-THERM® stapler system

Precise, low-wear stainless steel tool for handling magazine-loaded staples, with curved magazine and ergonomic grip for pipes up to Ø 20 mm

KLIMAPEX® heating pipe PE-RT

12 x 1.5 / 15 x 1.8 (green) / 17 x 2.0 / 20 x 2.0 as 5-layer pipe or
15 x 1.8 (green) / 17 x 2.0 as 3-layer pipe made of polyethylene in accordance with DIN 16833, Type I/II with increased thermal stability and insoluble, impermeable EVOH barrier layer

DIN CERTCO **3V 204 PE-RT**

KLIMAPEX® heating pipe PE-Xa

15 x 1.8 / 17 x 2.0 / 20 x 2.0 / 25 x 2.3
as 5-layer pipe made of high-pressure crosslinked polyethylene in accordance with DIN EN ISO 15875, degree of crosslinking ≥ 70 % in accordance with DIN 16892 and insoluble, impermeable EVOH barrier layer

SKZ

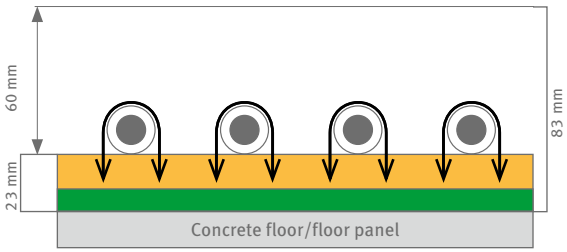
NOTE Complete your PUR-THERM ®surface heating with further EMPUR® products, such as a heating circuit manifold, manifold accessories, manifold cabinet and control technology, in order to enjoy a self-contained EMPUR® system (see page 14 et seq.). We'd be pleased to advise you!

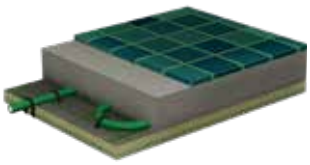
PUR-THERM® stapler system

The thing with the needle

Separating ceiling above rooms with similar use (20°C/20°C)

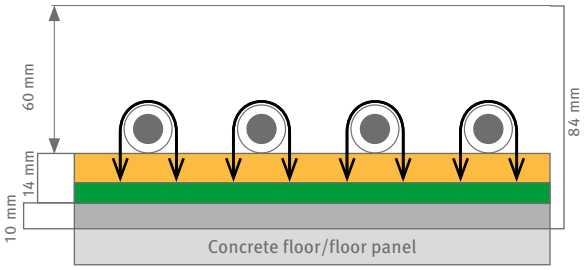
Requirement DIN EN 1264 R = 0.75 m² K/W (U = 1.33 W/m²K)

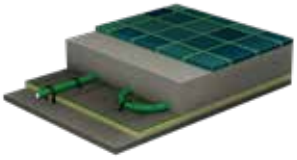




60 mm heating screed incl. system pipe 15 x 1.8 mm
23 mm composite panel PUR/PE 13 + 10 mm

83 mm (without lining) R = 0.780 m² K/W



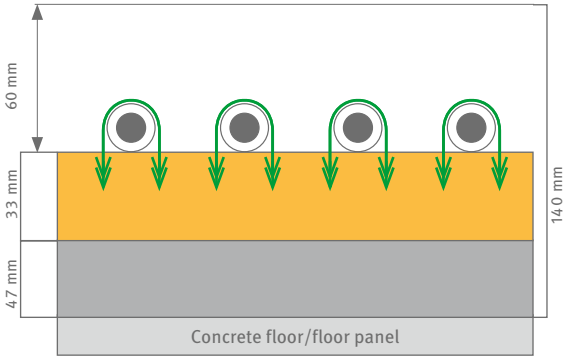


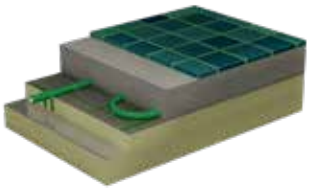
60 mm heating screed incl. system pipe 15 x 1.8 mm
14 mm composite panel PUR/PE 9 + 5 mm
10 mm additional insulation EPS-DEO WLS 032

84mm (without lining) R = 0.857 m² K/W

Insulation in accordance with EnEV

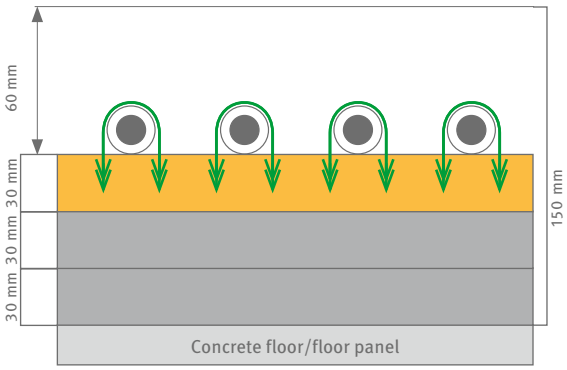
The energy performance certificate of the building must be drafted and checked to determine the floor insulation below the underfloor heating against soil, unheated rooms and rooms with limited heating. Examples of underfloor heating with special thermal protection against unheated rooms or rooms that are heated intermittently, rooms below or ground-floor rooms with composite panels and heating pipe 15 x 1.8.

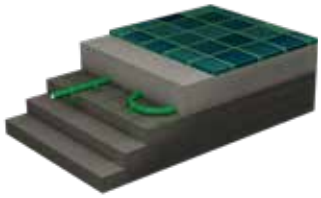




60 mm heating screed incl. system pipe 15 x 1.8 mm
33 mm composite panel PUR 33
47 mm additional insulation PUR 47 ALU/PUR/ALU

140 mm (without lining) R = 3.333 m² K/W





60 mm heating screed incl. system pipe 15 x 1.8 mm
30 mm composite panel “Kompakt” WLS 032
30 mm additional insulation EPS-DEO WLS 032
30 mm additional insulation EPS-DEO WLS 032

150 mm (without lining) R = 2.813 m² K/W

PUR-THERM® stapler system

Your benefits

For specialised craftsmen

- One system, one manufacturer – from consultation and design to component delivery
- **Security for end clients and processors – system components optimally adapted to each other with universal licences**
- Proven quality through **in-house production**
- Minimum installation height ≥ 74 mm with PUR/PE 14 (without lining)
- Quick and neat processing of the system panels
- Robust panel during use with **long-term stability**
- Pre-defined laying grid (50 mm) as an orientation aid when positioning the KLIMAPEX® plastic heating pipes
- **Low-weight material**, enabling easy and non-tiring installation
- Turbo-Cube panels in versions with various insulation materials enable quick laying even in large rooms
- Easy laying – easy and quick laying out of the insulation materials, short installation times
- **Easy handling of the few system components**
- Single-sided film overhang for overlapped laying
- **Minimal waste due to overlay technology**
- Quick and flexible laying of pipes of all dimensions and qualities
- Simple and secure installation of KLIMAPEX® plastic heating pipes with the staple system
- The staple system enables an **ergonomic working position** and is easy to use. The low weight ensures non-tiresome working. Pre-loaded staples are lodged into the composite film safely and quickly.
- **Foamed, highly tear-resistant, multi-layer composite film** for exceptional staple adhesion and secure installation of the KLIMAPEX® plastic heating pipes
- **Many insulation materials** available with various strengths
- Optimal combination with calcium sulphate liquid screeds thanks to the KLIMAPEX® plastic heating pipes being completely covered
- Many expansion possibilities – comprehensive EMPUR® range with PUR additional insulation materials and various system accessories and tools, as well as manifold and control technology products
- **Well-known system with years of practical experience**
- 10-year material and consequential damage liability on EMPUR® heating pipe with exclusive use of our system components subject to compliance with further warranty conditions (see EMPUR ®warranty certificate)

PUR-THERM® stapler system

Your benefits

For the end-consumer

- **Various system panels available with or without sound absorption**
- **Heat insulation across the entire surface**
- PUR panels with the highest heat insulation value for reduced installation height – forward-thinking heat insulation
- Problem-free implementation of the **Energy Savings Regulation (EnEV) requirements** in new and old buildings
- Ideal for modern heat generators (condensing boilers, regenerative heat generators, etc.)
- No swirling up of dust, making it suitable for people with allergies
- **Maximum comfort** thanks to heat radiation
- New design possibilities without radiators
- **Increases building value**
- **Energy savings** through low flow temperatures
- Floor heating for all layouts
- **Comfort** thanks to even heat distribution
- **Well-known system with years of practical experience**
- **Energy efficiency** – best energy footprint with PUR-THERM® products

PUR-THERM® stapler system

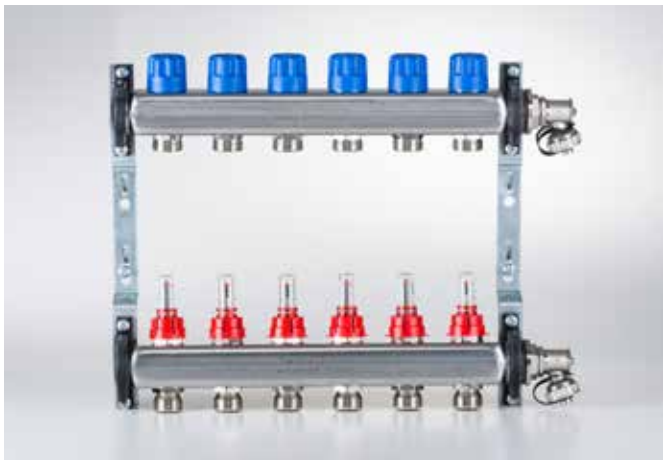
Additional system components

Manifold technology

At our Buchholz-Mendt location, EMPUR® produces high-quality manifolds and special solutions from brass and stainless steel for client-specific requirements.

The structural design of our new manifold generation requires significantly less effort for specialised craftsmen to assemble in combination with the EMPUR® manifold cabinets. With the specially developed quick manifold assembly technology, the manifolds are simply suspended in the guide rails of the manifold cabinet and fixed using two fillister head screws.

Thanks to extensive manifold accessories, we enable the right connection in every situation for a perfectly adapted system – ranging from connection sets and heat volume measurement sets to line regulating or zone valves, pointer thermometers and restrictors.

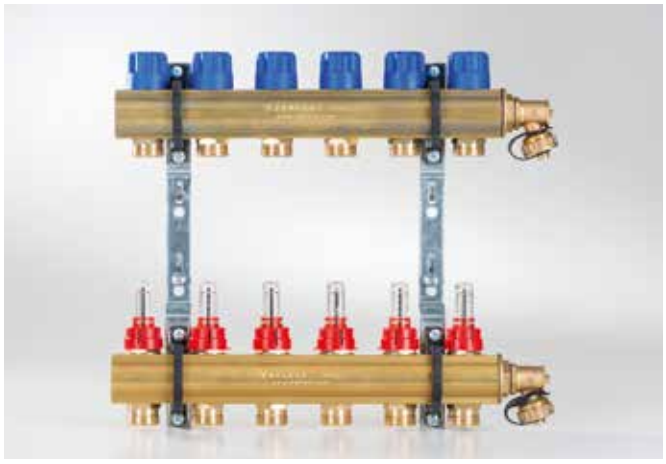


PUR-THERM® stainless steel manifold, Series 03, 2-12 heating circuits

Stainless steel manifold

System manifold HKV-D, Series 03
with flow rate indicator
Stainless steel section pipe complete manifold with integrated valves, 50 mm valve clearance. Pre-assembled in the factory on the manifold holder with sound insulation inserts for fast assembly in the manifold cabinet, return flow value (top) with blue protection cap, EMPUR® actuators can be installed directly instead. Feed flow (bottom) with controllable and adjustable flow rate indicators (0-2.5 l/min.), heating circuit connections 3/4" euroconus. 2 manifold end-pieces with reducer for filling, bleeding and draining, rotating, packaged and enclosed. All packaged in a carton and with identification plates.

NEW for quick manifold installation



PUR-THERM® brass manifold, Version 2.0, 2-12 heating circuits 1" IT or 13-16 heating circuits 5/4" IT

Brass manifold

System manifold HCM-D, version 2.0
with flow rate indicator
Complete manifold made of brass section pipe with integrated valves, 50 mm valve clearance, return flow valve (top) with blue protection cap. Pre-assembled on manifold holders with sound insulation inserts. EMPUR® actuators can be installed directly instead. Feed flow (bottom) with controllable and adjustable flow rate indicators (0-2.5 l/min.). Heating circuit connections 3/4" euroconus. 2 manifold end-pieces with reducer for filling, bleeding and draining, rotating, packaged and enclosed. All packaged in a carton and with identification plates.

NEW for quick manifold installation

NOTE The water quality requirements according to VDI 2035 must be adhered to!

Control manifold

Control manifold HKV-DR, Version 2.0 with high-efficiency pump and thermoseparator
Manifold made of brass section pipe with integrated valves, 50 mm valve clearance. Pre-assembled on manifold holders with sound insulation inserts. Return flow valve (top) with blue protection cap. EMPUR® actuators can be installed directly instead. Feed flow (bottom) with controllable and adjustable flow rate indicators (0-2.5 l/min.). Heating circuit connections 3/4" euroconus. In box with nameplates to identify the manifold outlets. Suitable for variable or constant flow temperature control in combination with control set V or K for the hydraulic integration of low-temperature underfloor heating in an existing heating system.

NEW for quick manifold installation

Control manifold HKV-DR with high-efficiency pump and thermoseparator, Version 2.0, 2-16 heating circuits

NOTE The water quality requirements according to VDI 2035 must be adhered to! To protect the flow rate indicator and fittings, we recommend that old systems are rinsed thoroughly and to check for the installation of a dirt trap. Use 'Top Standard plus' or 'Exclusiv plus' manifold cabinets in combination with this! Thermostatic head control set K or actuator control set V must be ordered separately! Control terminal strip with pump logic required, overheat thermostat recommended, WMZ set upon request!

EMPUR® Geniax complete manifolds

The unique Geniax pump technology in the unit together with the high-quality EMPUR® components such as the manifold, manifold cabinet etc. facilitates the installation and operation of modern surface heating systems (e.g. underfloor or wall heating systems) as well as conventional heating systems.

The EMPUR® Geniax heat distribution system is a flexible surface heating and control system which enables appropriate, customised heating in all rooms in residential and non-residential buildings.

The advantages of individual production and the production expertise set standards in manifold technology.

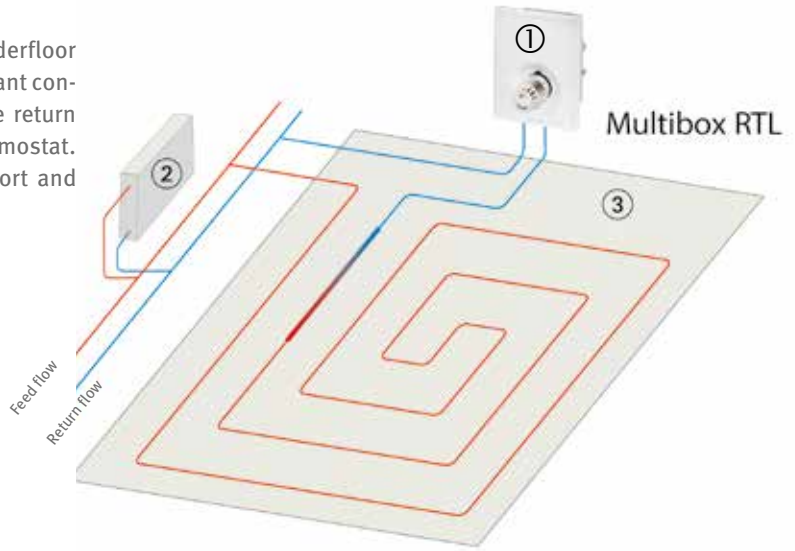
EMPUR® Geniax complete manifolds

PUR-THERM® stapler system

Additional system components

Multibox-RTL individual room control

for the renovation and subsequent installation of underfloor heating in individual rooms, e.g. bathroom. EnEV compliant control is possible thanks to the separate detection of the return flow temperature and the room temperature by the thermostat. A simple and low-cost installation that increases comfort and reduces energy costs.



System illustration (example):

Multibox RTL ① in the system return flow of the underfloor heating ③ connected to the return flow temperature limitation in an existing heating system with heating surfaces ②

Manifold accessories

Whether you are installing a low-temperature heating system or you would like to integrate surface heating into a high-temperature heating system. We have the right accessories for you! Here, you will find a selection from our range. Please see our current price list for further components.

Thermostat head “K” control set for HCM-DR

Actuator PUR DRIVE “V” control set for HCM-DR

Ball valve 3/4" nickel-plated for HCM-DR

Overheat thermostat 230 V for HCM-DR

Connection set 90° for thermoseparator for HCM-DR

DG connection set for thermoseparator for HCM-DR

Manifold cabinets

PUR-THERM® manifold cabinets provide the perfect location for manifolds and control stations. PUR-THERM® manifolds can be installed in the traditional way using the 'Top Standard' version as a wall-mounted cabinet and the 'Exclusiv' version as a flush-mounted cabinet.

The large manifolds, control stations and control manifolds are installed in the 'Top Standard plus' manifold cabinet for wall-mounting or 'Exclusiv plus' for flush-mounting.

The newest generation of EMPUR® manifold cabinets has been completely reworked and is manufactured from galvanised and foil-coated sheet steel. These offer adjusted suspension rails for the EMPUR® heating circuit manifold. With the specially developed **'quick manifold assembly technology'**, the manifolds are simply suspended in the guide rails of the manifold cabinet and fixed with two screws.

Additional benefits of the new generation of manifold cabinets include easy connection of the primary connections, time savings when feeding through electrical connection cables and, of course, secure and flexible mounting options.

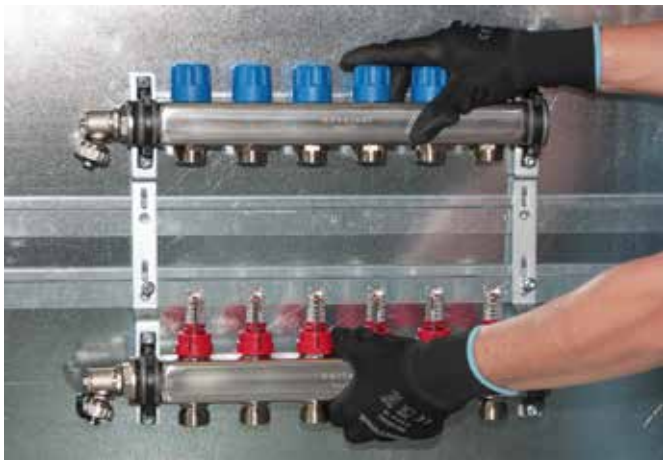
NEW for quick manifold installation

Manifold cabinet 'Top Standard' version

Manifold cabinet 'Exclusiv' version

Quick manifold assembly in only 2 steps

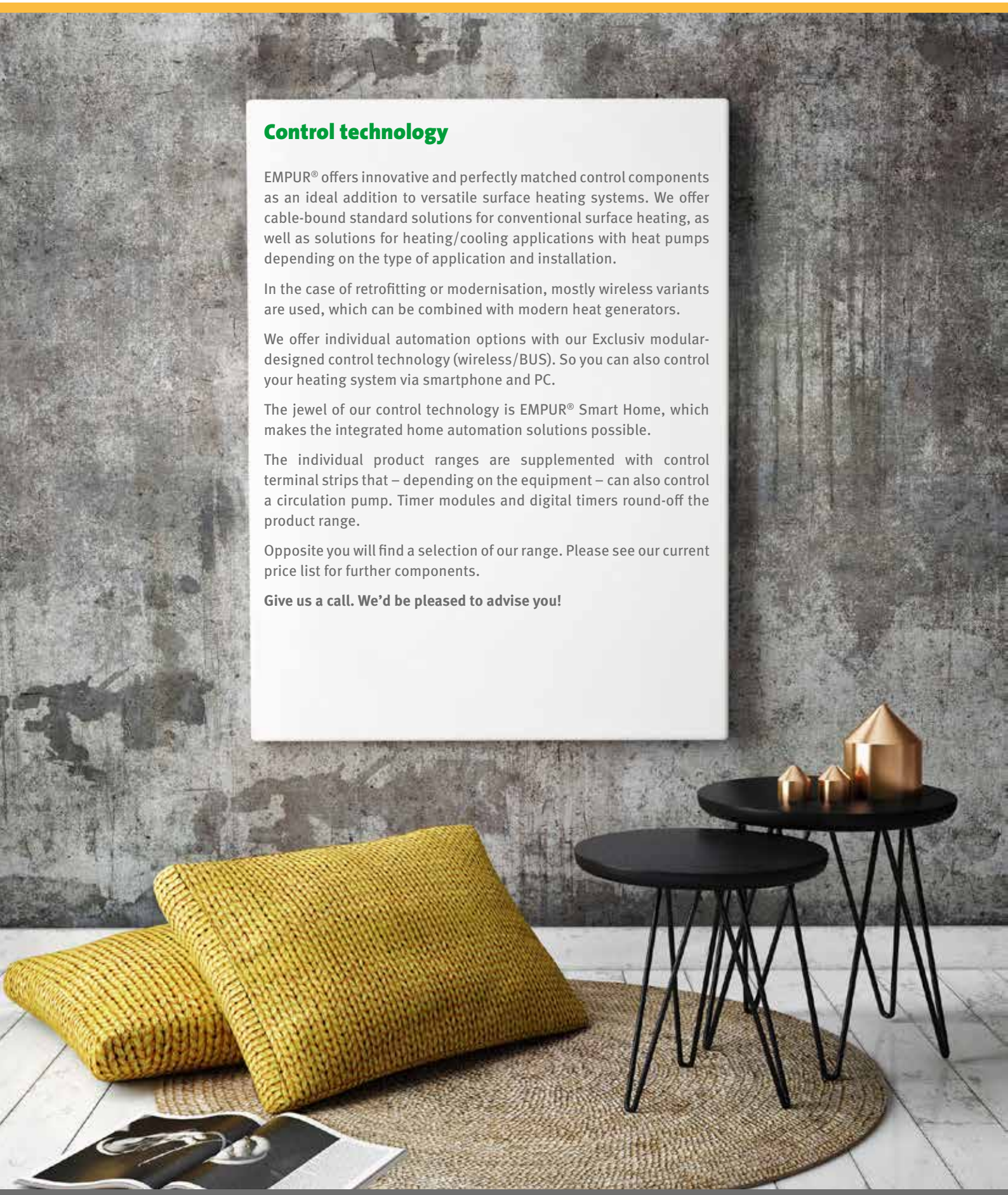
1. Suspend in the manifold cabinet rail



2. Secure with screws

PUR-THERM® stapler system

Additional system components



Control technology

EMPUR® offers innovative and perfectly matched control components as an ideal addition to versatile surface heating systems. We offer cable-bound standard solutions for conventional surface heating, as well as solutions for heating/cooling applications with heat pumps depending on the type of application and installation.

In the case of retrofitting or modernisation, mostly wireless variants are used, which can be combined with modern heat generators.

We offer individual automation options with our Exclusiv modular-designed control technology (wireless/BUS). So you can also control your heating system via smartphone and PC.

The jewel of our control technology is EMPUR® Smart Home, which makes the integrated home automation solutions possible.

The individual product ranges are supplemented with control terminal strips that – depending on the equipment – can also control a circulation pump. Timer modules and digital timers round-off the product range.

Opposite you will find a selection of our range. Please see our current price list for further components.

Give us a call. We'd be pleased to advise you!

Room operating unit 230 V/24 V analogue standard heating

Room operating unit 230 V/24 V Standard plus heating/cooling with display

Wireless/BUS room operating unit with display

Regulator terminal strip (6/10 zones) 230 V/24 V heating/cooling

Humidity monitoring with external sensor

Wireless/BUS base station

EMPUR® Smart Home Server

Basic module for EMPUR® Smart Home control terminal strip 230 V, wireless (2/6 zones)

Control terminal strip EMPUR® Smart Home 230 V, wireless (6 zones)

Room control unit for EMPUR® Smart Home wireless control terminal strips

EMPUR®

Your specialists for surface heating systems

Expertise, reliability and commitment are **EMPUR®'s** strengths. In addition to the production and sale of high-quality surface heating systems and components, the company's range of services also includes comprehensive services relating to the planning and installation of our complete systems.

EM plan's specialist engineers and planning consultants are available to help you with their expertise in demanding property planning in almost all TGA areas such as heating, air conditioning, ventilation, plumbing and electrical.

We have bundled our many years of experience in the installation of surface heating systems into our **EM-solution** and support tradesmen to complete their construction projects on time.

EMPUR®, EM-plan and EM-solution together form the **EM Gruppe®**. Thus, the three core areas of expertise – production, planning and installation – come from a single source.

planning

EM-plan

- Planning surface heating and cooling systems for new builds, modernisation projects and customised solutions
- Project planning for heating, ventilation and air conditioning applications, electrical engineering and swimming pool technology
- Creation of performance specifications
- Project planning for Smart Home solutions
- Planning and designing Geniax projects
- EnEV (energy saving ordinance) certificates according to DIN 18599
- Construction supervision for technical building systems

www.em-plan.net

production

EMPUR®

- Plastic heating pipes, insulation and composite panels for surface heating and cooling systems for new builds and modernisation projects
- Manifold technology and Geniax heat distribution systems
- Control technology and Smart Home solutions
- Accessories and tools
- Customised solutions for industrial, sports and commercial buildings

www.empur.com

installation

EM-solution

- Installation of surface heating and cooling systems in new build and modernisation projects
- Installation of the CUT-THERM® milling system
- Commissioning of Geniax heat distribution systems and heat pump systems
- Service for technical building installations

www.em-solution.de

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